

Kentucky Teachers' Retirement System

Information for

KTRS Funding Work Group



Presented by

Gary L. Harbin, CPA
Executive Secretary



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Executive Secretary

July 31, 2015

BLUE RIBBON COMMISSION
PUBLIC RETIREMENT SYSTEMS



BRIAN J. CRALL
CHAIRMAN

DECEMBER 2007

Final Report

**BLUE RIBBON
COMMISSION**
on
**PUBLIC
RETIREMENT
SYSTEMS**

December 2007

V. INVIOABLE CONTRACT

V. INVIOABLE CONTRACT

When analyzing the state's inviolable contract, the legal opinion makes a distinction between pension benefits and medical benefits. In regard to pension benefits, the existence of an inviolable contract seems clear. However, while KRS and KTRS are clearly covered by the scope of the inviolable contract for pension and medical insurance benefits, KTRS coverage for medical insurance benefits is limited to access only. It is less clear regarding the scope of medical benefits protected and, to date, there is no Kentucky case law on point.

"The Kentucky statement of intent is one of the strongest among the states: its statute expressly states that pension benefit laws "constitute an inviolable contract of the Commonwealth and the benefits provided therein shall ... not be subject to reduction or impairment by alteration, amendment, or repeal." See, e.g., KRS 16.653, 61.692, 78.852. Thus, under Kentucky law, pension benefits for public employees and retirees are a contractual right, and those benefits may not be reduced or terminated by the legislature retrospectively.

With respect to medical benefits, there is a split of authority among the states on the issue whether medical insurance or other medical benefits are part of the retirement benefit conferred by public retirement systems. However, the Kentucky statutes provide that medical benefits are included as part of the "inviolable contract" of the Commonwealth with regard to KRS participants, with the exception that benefits "provided to a member whose participation begins on or after July 1, 2003, shall not be considered as benefits protected by the inviolable contract." See, KRS 61.702(8)(d). The extent to which the Kentucky legislature may modify the medical benefits that are presently conferred by statute to employees hired before July 1, 2003, has not been determined by the Kentucky courts. To the extent that the inviolability exists relative to post employment medical insurance, it is clear by related statutes in KRS Chapter 18A that it does not extend beyond the value of the Kentucky Care Standard Plan of 1994.

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THE INVIOABLE CONTRACT

Covers all KTRS statutes --- KRS 161.220 through 161.710.

What is subject to amendment under the inviolable contract?

- *Retirement allowances calculated on an average of members' 3 highest salaries if the member is at least 55 years of age and has at least 27 years of service. [KRS 161.220(9)]*
- *Post-retirement re-employment provisions. [KRS 161.605((1)-(8)]*
- *Retirement benefits for members providing part-time or substitute teaching services. [KRS 161.612]*
- *Retired teachers' health insurance---only access to group coverage is guaranteed. [KRS 161.675]*
- *Sick leave payments used for retirement calculation purposes. [KRS 161.155(10)]*

KENTUCKY TEACHERS' RETIREMENT SYSTEM

Social Security COLAs & KTRS COLAs

FISCAL YEAR	SS COLAs	KTRS COLAs	FISCAL YEAR	SS COLAs	KTRS COLAs
FY 1975-76	8.0	1.0	FY 1995-96	2.6	1.5
FY 1976-77	6.4	1.0	FY 1996-97	2.9	1.5
FY 1977-78	5.9	1.0	FY 1997-98	2.1	1.5
FY 1978-79	6.5	1.0	FY 1998-99	1.3	1.5
FY 1979-80	9.9	1.0	FY 1999-00	2.5	1.5
FY 1980-81	14.3	1.0	FY 2000-01	3.5	1.5
FY 1981-82	11.2	1.0	FY 2001-02	2.6	1.5
FY 1982-83	7.4	1.0	FY 2002-03	1.4	1.5
FY 1983-84	3.5	1.0	FY 2003-04	2.1	1.5
FY 1984-85	3.5	1.0	FY 2004-05	2.7	1.5
FY 1985-86	3.1	1.0	FY 2005-06	4.1	1.5
FY 1986-87	1.3	1.0	FY 2006-07	3.3	1.5
FY 1987-88	4.2	1.0	FY 2007-08	2.3	1.5
FY 1988-89	4.0	1.0	FY 2008-09	5.8	1.5
FY 1989-90	4.7	1.0	FY 2009-10	0.0	1.5
FY 1990-91	5.4	1.5	FY 2010-11	0.0	1.5
FY 1991-92	3.7	1.5	FY 2011-12	3.6	1.5
FY 1992-93	3.0	1.5	FY 2012-13	1.7	1.5
FY 1993-94	2.6	1.5	FY 2013-14	1.5	1.5
FY 1994-95	2.8	1.5	FY 2014-15	1.7	1.5

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Follow-up Information



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July 31, 2015

Follow-up Information

**Annual investment returns
for last ten years**

Schedule of bond payments for \$3.3B bond

What would pay as you go look like

Demographics about Kentucky teachers

Number of people receiving refunds

Number of people drawing from two retirement accounts

KTRS Investment Returns

Year	Returns
FY 2006	5.4
FY 2007	15.3
FY 2008	(5.7)
FY 2009	(14.2)
FY 2010	13.1
FY 2011	21.6
FY 2012	2.4
FY 2013	14.1
FY 2014	18.1
FY 2015	5.1

INVESTMENT PERFORMANCE

KTRS RETURNS

FISCAL YEAR ENDED JUNE 30, 2015

	1-Year	3-Year	5-Year	10-Year	20-Year
KTRS	5.1%	12.3%	12.0%	7.0%	7.6%
CALSTRS	4.8%	12.3%	12.1%	7.0%	7.8%



CALSTRS Facts

\$191.4 billion in assets

68% funded

Follow-up Information

**Administrative and
investment costs since 2009**

Schedule of bond payments for \$3.3B bond

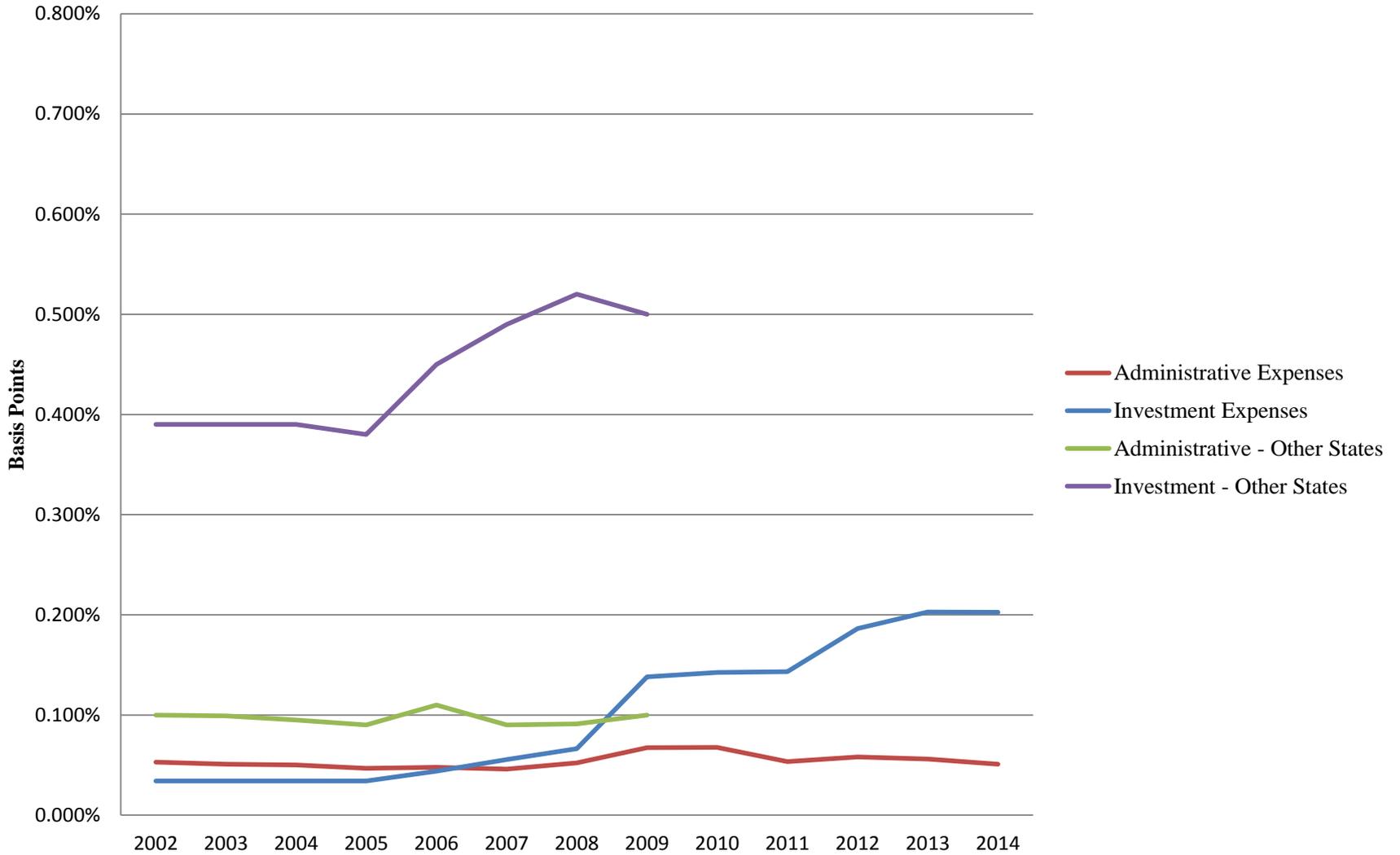
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KTRS Expenses Compared to Other Systems



ADMINISTRATIVE EXPENSES ANALYSIS

Our expenses compared to similar size systems	Assets End of Year	Actual Expenses	Basis Points
Kentucky Teachers 6/30/14	18,720,359,574	9,078,009	0.0485%
Kansas Public Employees 6/30/14	16,575,660,909	10,085,572	0.0608%
New Mexico Public Employees 6/30/14	15,104,097,545	10,416,788	0.0690%
Georgia Employees 6/30/14	17,266,692,000	14,476,000	0.0838%
Louisiana Teachers 6/30/14	17,900,035,458	15,026,969	0.0839%
Ohio Teachers Retirement System 6/30/14	75,420,054,000	63,485,000	0.0842%
Indiana Public Employees 6/30/14	24,695,285,000	28,959,000	0.1173%

Follow-up Information

**Explanation of “Green Box”
and “Yellow Box Dollars”**

Schedule of bond payments for \$3.3B bond

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Funding Provided in 2014-2016 Budget

	Actual <u>2012-2013</u>	Actual <u>2013-2014</u>	Provided by Budget <u>2014-2015</u>	Provided by Budget <u>2015-2016</u>
Personal Payments	\$ 2,348,000	\$ 2,563,900	\$ 1,938,900	\$ 1,959,800
1992-94 Increase in Survivor Benefits	1,483,000	1,507,900	1,525,100	1,542,500
Prior Service	640,000	640,000	640,000	640,000
Handicapped Child	621,900	648,100	617,300	640,800
Amortized Payments				
<i>1998-2000 COLA</i>	15,333,900	7,938,600		
<i>2000-02 COLA</i>	12,511,400	12,511,400	12,511,400	7,227,700
<i>2002-04 COLA</i>	21,405,700	21,405,700	21,405,700	21,405,700
<i>2004-06 COLA</i>	15,413,700	15,413,700	15,413,700	15,413,700
<i>2006-08 COLA</i>	15,730,200	15,730,200	15,730,200	15,730,200
2002-04 Min Benefit Adj (\$335-\$440)	3,375,900	3,375,900	3,375,900	3,375,900
Sick leave liability 1998-2000	4,660,300	2,425,900		
Sick leave liability 2000-2002	6,167,100	6,167,100	6,167,100	3,579,100
Sick leave liability 2002-2004	5,337,000	5,337,000	5,337,000	5,337,000
Sick leave liability 2004-2006	5,480,300	5,480,300	5,480,300	5,480,300
Sick leave liability 2006-2008	5,814,400	5,814,400	5,814,400	5,814,400
Sick leave liability 2008-2010	5,042,700	5,042,700	5,042,700	5,042,700
Sick leave liability 2010-2012	9,632,400	9,632,400	5,198,100	5,198,100
Sick leave liability 2012-2014	4,190,100	8,630,400	7,808,600	7,808,600
Sick leave liability 2014-2016			4,527,300	9,448,000
Medical Insurance subsidy amortization 2008-10 Biennium	2,574,100	2,574,100	2,574,100	2,574,100
Medical Insurance subsidy amortization 2010-12 Biennium	3,363,200	3,363,200	3,363,200	3,363,200
State Cost for new retirees starting 7/1/10		38,700,000	50,200,000	61,300,000
Employer Contribution Shortfall 2011-2013 KRS 161.550(6)	194,000		31,408,200	-
Actuarial required employer contributions				
TOTAL KTRS BUDGET REQUEST	<u>\$ 141,319,300</u>	<u>\$ 174,902,900</u>	<u>\$ 206,079,200</u>	<u>\$ 182,881,800</u>
<i>Payments available for debt service</i>	<i>136,032,400</i>	<i>130,843,000</i>	<i>119,749,700</i>	<i>116,798,700</i>
Memo Only - Debt Service on POB and OPEB Bond				
<i>Debt service paid to OFM included in enacted</i>	<i>103,350,800</i>	<i>124,789,200</i>	<i>120,693,300</i>	<i>116,436,600</i>
	<i>244,670,100</i>	<i>299,692,100</i>	<i>326,772,500</i>	<i>299,318,400</i>

Prepared by OSBD

Fiscal Year	Bond Issue A	Bond Issue B	Bonds Issue C	Total Debt Service Budgeted	Difference from FY 2016
<u>Debt Service</u>	<u>August 2010</u>	<u>March 2011</u>	<u>February 2013</u>		
	\$467,555,000	\$269,815,000	\$152,400,000		
2011	55,092,681			55,092,681	
2012	69,042,487	26,235,908	-	95,278,395	
2013	69,029,491	34,321,283		103,350,774	
2014	69,029,744	34,301,452	21,458,000	124,789,196	
2015	69,027,711	34,302,558	17,362,983	120,693,251	
2016	64,776,650	34,301,143	17,358,769	116,436,562	
2017	55,699,175	33,776,181	17,363,012	106,838,368	(9,598,194)
2018	45,490,372	34,298,205	17,359,347	97,147,924	(19,288,638)
2019	27,208,284	34,297,016	17,360,725	78,866,025	(37,570,537)
2020	8,919,862	34,298,555	17,359,998	60,578,416	(55,858,146)
2021		34,296,444	17,363,554	51,659,998	(64,776,564)
2022		15,653,375	17,362,474	33,015,849	(83,420,713)
2023			17,365,463	17,365,463	(99,071,099)
2024				0	(116,436,562)

**Funding
Proposed
in
2014 –
2016
Budget**

Follow-up Information

**Schedule of bond payments for
\$3.3B bond**

Schedule of bond payments for \$3.3B bond

What would pay as you go look like?

Demographics about Kentucky teachers

Number of people receiving refunds

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Teachers' Pension Funding ~ Bond Series Comparison

Projected Bonding Example Using "A2" Rated Taxable Municipal Rates February 5, 2015

		Total Payback	Average Coupon	Total Bond	Issue 1	Issue 2	Issue 3
Bond Series A	Single issue	6,135,577,781	4.112%	3,300,000,000	3,300,000,000	-	-
Bond Series B	Single issue plus .25%	6,302,135,280	4.362%	3,300,000,000	3,300,000,000	-	-
DIFFERENCE		166,557,499	0.250%				
Added cost of interest rate increases over bond issue							
<i>Increase of 0.250%</i>		\$166,800,000 for \$3.3 billion bond					

(Projections conservatively made using a two rating level downgrade from state's current rating of Aa3.)

Teachers' Pension Funding

Bond Series Comparison

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Bond Series B	Single issue plus .25%	6,302,135,280	4.362%	3,300,000,000	3,300,000,000	-	-
	Difference	166,557,499	0.250%				

Added cost of interest rate increases over bond issue:

Increase of 0.250% \$ 166,800,000 for \$3.3 billion bond

Possible Interest Rate Increases

Date of FOMC Mtgs*		Possible Interest Rate Increases		Date of Bond Issues	
Start	End	Each	Cumulative	Series A	Series B
6/16/2015	6/17/2015	0.00%	0.00%	1	
7/28/2015	7/29/2015	0.25%	0.25%		1
9/16/2015	9/17/2015	0.00%	0.25%		
10/27/2015	10/28/2015	0.25%	0.50%		
12/15/2015	12/16/2015	0.00%	0.50%		
1/29/2016	1/30/2016	0.00%	0.50%		
3/14/2016	3/15/2016	0.25%	0.75%		
4/28/2016	4/29/2016	0.00%	0.75%		
6/12/2016	6/13/2016	0.00%	0.75%		
7/27/2016	7/28/2016	0.25%	1.00%		
9/10/2016	9/11/2016	0.00%	1.00%		
10/25/2016	10/26/2016	0.00%	1.00%		
12/9/2016	12/10/2016	0.00%	1.00%		

*Projected Dates for 2016 FOMC Meetings / 8 times per year

Per Bruce Richards - Marathon Capital

Thinks FOMC reasonably could raise rates a minimum of 100 bps in 18 months.

Bond Series Comparison

Kentucky State Asset / Liability Commission Taxable Funding Notes

Systems Bond Proceeds	3,267,000,000
Cost of Issue	33,000,000 100 bps
Total	3,300,000,000

Debt Service

Issue Size	3,300,000,000
Issue Date	07/01/15
First Payment	01/01/16
First Payment Amount	67,852,975
Average Coupon	4.1%

Table of Principal Maturity Accumulations

FY 16-18	5,000,000
19-21	7,500,000
22-24	9,000,000
25-28	8,500,000
29-32	8,000,000
33-35	8,000,000
36-38	6,000,000
39-41	2,000,000

Projected Bonding Example Using "A2" Rated Taxable Municipal Rates February 5, 2015

Bond Maturities

Maturity	Par	Coupon	Annual Interest Payment
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7/1/2016	5,000,000	0.940%	47,000
7/1/2017	10,000,000	1.360%	136,000
7/1/2018	15,000,000	1.784%	267,600
7/1/2019	22,500,000	2.129%	478,913
7/1/2020	30,000,000	2.473%	741,900
7/1/2021	37,500,000	2.740%	1,027,313
7/1/2022	46,500,000	3.066%	1,397,790
7/1/2023	55,500,000	3.200%	1,776,000
7/1/2024	64,500,000	3.405%	2,196,225
7/1/2025	73,000,000	3.612%	2,636,760
7/1/2026	81,500,000	3.680%	2,999,200
7/1/2027	90,000,000	3.750%	3,375,000
7/1/2028	98,500,000	3.820%	3,762,700
7/1/2029	106,500,000	3.890%	4,142,850
7/1/2030	114,500,000	4.120%	4,717,400
7/1/2031	122,500,000	4.030%	4,936,750
7/1/2032	130,500,000	4.100%	5,350,500
7/1/2033	138,500,000	4.170%	5,775,450
7/1/2034	146,500,000	4.250%	6,226,250
7/1/2035	154,500,000	4.330%	6,689,850
7/1/2036	160,500,000	4.330%	6,949,650
7/1/2037	166,500,000	4.330%	7,209,450
7/1/2038	172,500,000	4.330%	7,469,250
7/1/2039	174,500,000	4.330%	7,555,850
7/1/2040	176,500,000	4.330%	7,642,450
7/1/2041	178,500,000	4.330%	7,729,050
7/1/2042	179,900,000	4.460%	8,023,540
7/1/2043	181,300,000	4.460%	8,085,980
7/1/2044	182,700,000	4.460%	8,148,420
7/1/2045	184,100,000	4.460%	8,210,860
7/1/2046		4.460%	-
7/1/2032		Avg Coupon	
Total	3,300,000,000	4.112%	135,705,950

Interest rates as of 2/05/2015

Debt Service by Fiscal Year

Fiscal Year End	Interest	Principal	Total Debt Service
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6/30/2016	67,852,975	-	67,852,975
6/30/2017	135,682,450	5,000,000	140,682,450
6/30/2018	135,590,950	10,000,000	145,590,950
6/30/2019	135,389,150	15,000,000	150,389,150
6/30/2020	135,015,894	22,500,000	157,515,894
6/30/2021	134,405,488	30,000,000	164,405,488
6/30/2022	133,520,881	37,500,000	171,020,881
6/30/2023	132,308,330	46,500,000	178,808,330
6/30/2024	130,721,435	55,500,000	186,221,435
6/30/2025	128,735,323	64,500,000	193,235,323
6/30/2026	126,318,830	73,000,000	199,318,830
6/30/2027	123,500,850	81,500,000	205,000,850
6/30/2028	120,313,750	90,000,000	210,313,750
6/30/2029	116,744,900	98,500,000	215,244,900
6/30/2030	112,792,125	106,500,000	219,292,125
6/30/2031	108,362,000	114,500,000	222,862,000
6/30/2032	103,534,925	122,500,000	226,034,925
6/30/2033	98,391,300	130,500,000	228,891,300
6/30/2034	92,828,325	138,500,000	231,328,325
6/30/2035	86,827,475	146,500,000	233,327,475
6/30/2036	80,369,425	154,500,000	234,869,425
6/30/2037	73,549,675	160,500,000	234,049,675
6/30/2038	66,470,125	166,500,000	232,970,125
6/30/2039	59,130,775	172,500,000	231,630,775
6/30/2040	51,618,225	174,500,000	226,118,225
6/30/2041	44,019,075	176,500,000	220,519,075
6/30/2042	36,333,325	178,500,000	214,833,325
6/30/2043	28,457,030	179,900,000	208,357,030
6/30/2044	20,402,270	181,300,000	201,702,270
6/30/2045	12,285,070	182,700,000	194,985,070
6/30/2046	4,105,430	184,100,000	188,205,430
6/30/2047	-	-	-
Total	2,835,577,781	3,300,000,000	6,135,577,781

In General Fund Budget

Retired Amortized Payments to KTRS at FY16 Level (Green Box Dollars)	Retired Debt Service (Yellow Box Dollars)	Total General Fund Available for Debt Service	Debt Service minus General Fund Available Balance to/(from) Escrow	KTRS Bond Escrow Surplus / (Deficit)
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116,798,700		116,798,700	48,945,725	48,945,725
116,798,700	9,598,194	126,396,894	(14,285,556)	34,660,169
116,798,700	19,288,638	136,087,338	(9,503,612)	25,156,557
116,798,700	37,570,537	154,369,237	-3,980,087	29,136,644
116,798,700	55,858,146	172,656,846	15,140,952	44,277,596
116,798,700	64,776,564	181,575,264	17,169,776	61,447,372
116,798,700	83,420,713	200,219,413	29,198,532	90,645,904
116,798,700	99,071,009	215,869,799	37,061,469	127,707,373
116,798,700	116,436,562	233,235,262	47,013,827	174,721,200
116,798,700	116,436,562	233,235,262	39,999,939	214,721,139
116,798,700	116,436,562	233,235,262	33,916,432	248,637,571
116,798,700	116,436,562	233,235,262	28,234,412	276,871,983
116,798,700	116,436,562	233,235,262	22,921,512	299,793,495
116,798,700	116,436,562	233,235,262	17,990,362	317,783,857
116,798,700	116,436,562	233,235,262	13,943,137	331,726,994
116,798,700	116,436,562	233,235,262	10,373,262	342,100,256
116,798,700	116,436,562	233,235,262	7,200,337	349,300,593
116,798,700	116,436,562	233,235,262	4,343,962	353,644,555
116,798,700	116,436,562	233,235,262	1,906,937	355,551,492
116,798,700	116,436,562	233,235,262	(92,213)	355,459,279
116,798,700	116,436,562	233,235,262	(1,634,163)	353,825,116
116,798,700	116,436,562	233,235,262	(814,413)	353,010,703
116,798,700	116,436,562	233,235,262	265,137	353,275,840
116,798,700	116,436,562	233,235,262	1,604,487	354,880,327
116,798,700	116,436,562	233,235,262	7,117,037	361,997,364
116,798,700	116,436,562	233,235,262	12,716,187	374,713,551
116,798,700	116,436,562	233,235,262	18,401,937	393,115,488
116,798,700	116,436,562	233,235,262	24,878,232	417,993,720
116,798,700	116,436,562	233,235,262	31,532,992	449,526,712
116,798,700	116,436,562	233,235,262	38,250,192	487,776,904
116,798,700	116,436,562	233,235,262	45,029,832	532,806,736
		-	-	-
		-	-	-
		-	-	-
3,620,759,700	3,047,624,817	6,668,384,517	532,806,736	

Follow-up Information

**What would pay as you
go look like?**

Schedule of bond payments for \$3.3B bond

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Actuarial Analysis of Teachers' Pension Fund

Current Funding Status



Fiscal Year	Total Employer Required Contributions	Employer Statutory Contributions	Additional ARC - Required	Amount of	Additional	Amount of	Additional ARC - Required Without Funding Plan	Additional ARC in (7) as Percentage of Payroll	Funding Ratios Current Funding Additional ARC not made
				Contributed for Amortized Benefit Payments	ARC - Less Amortized Benefit Payments	Contributed per Budget as Debt Service is Retired			
	(1)	(2)	(3) = (1) - (2)	(4)	(5) = (3)-(4)	(6)	(7) = (5)-(6)	(8)	(9)
FY 2015-16	1,038,098,289	443,698,289	594,400,000	107,000,000	487,400,000	0	487,400,000	12.97%	51.9%
FY 2016-17	1,082,284,061	455,920,234	626,363,827	105,991,900	520,371,927	9,598,194	510,773,733	13.55%	53.6%
FY 2017-18	1,066,387,702	472,847,287	593,540,415	104,643,800	488,896,615	19,288,638	469,607,977	12.30%	55.4%
FY 2018-19	1,105,565,504	490,706,877	614,858,627	102,616,000	512,242,627	37,570,537	474,672,090	12.06%	55.9%
FY 2019-20	1,137,394,075	508,481,866	628,912,209	101,387,100	527,525,109	55,858,146	471,666,963	11.61%	56.8%
FY 2020-21	1,189,134,361	526,865,062	662,269,299	100,041,900	562,227,399	64,776,564	497,450,835	11.86%	57.0%
FY 2021-22	1,269,490,247	546,153,708	723,336,539	98,477,400	624,859,139	83,420,713	541,438,426	12.49%	56.2%
FY 2022-23	1,356,731,707	578,783,612	777,948,095	84,162,900	693,785,195	99,071,099	594,714,096	13.29%	55.4%
FY 2023-24	1,451,232,415	611,879,300	839,353,115	69,936,000	769,417,115	116,436,562	652,980,553	14.12%	54.5%
FY 2024-25	1,553,813,881	642,365,751	911,448,130	59,022,100	852,426,030	116,436,562	735,989,468	15.40%	53.7%
FY 2025-26	1,664,874,078	672,384,865	992,489,213	49,042,000	943,447,213	116,436,562	827,010,651	16.75%	52.8%
FY 2026-27	1,785,697,296	704,133,073	1,081,564,223	38,101,200	1,043,463,023	116,436,562	927,026,461	18.17%	51.9%
FY 2027-28	1,919,187,604	736,180,790	1,183,006,814	27,497,400	1,155,509,414	116,436,562	1,039,072,852	19.70%	51.0%
FY 2028-29	2,066,019,750	761,245,163	1,304,774,587	24,809,700	1,279,964,887	116,436,562	1,163,528,325	21.33%	49.9%
FY 2029-30	2,228,574,406	786,812,992	1,441,761,414	22,454,700	1,419,306,714	116,436,562	1,302,870,152	23.10%	48.8%
FY 2030-31	2,407,937,476	813,517,613	1,594,419,863	19,980,500	1,574,439,363	116,436,562	1,458,002,801	24.98%	47.6%
FY 2031-32	2,606,418,967	841,636,751	1,764,782,216	17,256,600	1,747,525,616	116,436,562	1,631,089,054	26.98%	46.3%
FY 2032-33	2,826,466,470	871,669,226	1,954,797,244	13,888,300	1,940,908,944	116,436,562	1,824,472,382	29.13%	44.9%
FY 2033-34	3,068,600,445	903,893,155	2,164,707,290	9,448,000	2,155,259,290	116,436,562	2,038,822,728	31.41%	43.4%
FY 2034-35	3,335,984,101	937,532,262	2,398,451,839	4,920,700	2,393,531,139	116,436,562	2,277,094,577	33.82%	41.8%



Actuarial Analysis of House Bill 4

\$3.3 Billion Bond and Phase into ARC Over Eight (8) Years

Fiscal Year	Additional ARC Projected Under House Bill 4	Retired Debt Service	Projected ARC Increase Due to Loss of Amortized Benefit Payments	Adjusted ARC Required	Amount of (4) Covered by Bond	Phase in Amount of ARC to be Contributed Under House Bill 4	Additional ARC in (7) as Percentage of Payroll	Funding Ratios Under House Bill 4
(1)	(2)	(3)	(4) = (1)-(2)+(3)	(5)	(6)	(7)	(8)	
FY 2015-16	487,400,000	0	0	487,400,000	487,400,000	0	0.00%	51.9%
FY 2016-17	520,371,927	0	105,991,900	626,363,827	626,363,827	44,000,000	1.17%	53.6%
FY 2017-18	245,020,786	0	104,643,800	349,664,586	349,664,586	88,000,000	2.31%	66.0%
FY 2018-19	240,962,712	0	102,616,000	343,578,712	343,578,712	132,000,000	3.35%	66.9%
FY 2019-20	230,436,623	0	101,387,100	331,823,723	331,823,723	176,000,000	4.33%	68.1%
FY 2020-21	233,701,986	0	100,041,900	333,743,886	333,743,886	220,000,000	5.24%	68.7%
FY 2021-22	259,996,868	0	98,477,400	358,474,268	358,474,268	264,000,000	6.09%	68.4%
FY 2022-23	285,570,938	0	84,162,900	369,733,838	369,733,838	308,000,000	6.88%	68.2%
FY 2023-24	310,726,143	0	69,936,000	380,662,143	99,217,161	354,870,269	7.67%	68.1%
FY 2024-25	335,427,731	0	59,022,100	394,449,831		394,449,831	8.26%	68.1%
FY 2025-26	359,408,462	0	49,042,000	408,450,462		408,450,462	8.27%	68.1%
FY 2026-27	382,688,150	0	38,101,200	420,789,350		420,789,350	8.25%	68.3%
FY 2027-28	403,980,014	0	27,497,400	431,477,414		431,477,414	8.18%	68.6%
FY 2028-29	424,837,089	0	24,809,700	449,646,789		449,646,789	8.24%	69.0%
FY 2029-30	446,212,882	0	22,454,700	468,667,582		468,667,582	8.31%	69.8%
FY 2030-31	469,938,334	0	19,980,500	489,918,834		489,918,834	8.39%	70.2%
FY 2031-32	493,248,323	0	17,256,600	510,504,923		510,504,923	8.45%	70.7%
FY 2032-33	518,577,801	0	13,888,300	532,466,101		532,466,101	8.50%	71.2%
FY 2033-34	544,008,218	0	9,448,000	553,456,218		553,456,218	8.53%	71.8%
FY 2034-35	570,273,101	0	4,920,700	575,193,801		575,193,801	8.54%	72.4%

Cavanaugh Macdonald Consulting, LLC

Follow-up Information

Demographics about Kentucky
teachers

Schedule of bond payments for \$3.3B bond

What would pay as you go look like?

Demographics about Kentucky teachers

Number of people receiving refunds

Number of people drawing from two retirement accounts

**Distribution of Active Contributing Members
as of June 30, 2014**

By Age			By Service		
Age	Male	Female	Years of Service	Male	Female
20-24	235	969	Less than 1	1,185	6,403
25-29	1,556	5,458	1-4	3,981	13,002
30-34	2,266	6,918	5-9	3,453	10,843
35-39	2,414	7,273	10-14	2,807	9,148
40-44	2,533	11,417	15-19	2,467	7,672
45-49	2,169	7,477	20-24	1,684	5,326
50-54	1,898	5,936	25-29	1,034	3,125
55-59	1,523	4,741	30-34	262	732
60-64	1,297	3,677	35 or more	108	175
65 & over	1,090	2,560			
TOTAL	16,981	56,426	TOTAL	16,981	56,426

Growth in Annuitants
as of June 30, 2014

Fiscal Year	Service Retirees	Disabilities	Beneficiaries of Retired Members	Survivors	Eligible to Retire
2005-06	33,618	2,039	1,631	495	531
2006-07	34,462	2,086	1,722	466	549
2007-08	35,550	2,155	1,778	468	554
2008-09	36,684	2,209	1,837	448	559
2009-10	37,607	2,284	1,915	435	567
2010-11	38,705	2,379	2,003	430	584
2011-12	40,107	2,478	2,126	444	596
2012-13	41,255	2,582	2,207	432	601
2013-14	42,581	2,641	2,304	429	596

Retirement Effective Dates	00-4.99	05-9.99	10-14.99	15-19.99	20-24.99	25-29.99	30>=	TOTAL
07/01/2004 TO 06/30/2005								
Average monthly benefit	\$187	\$528	\$906	\$1,488	\$1,978	\$2,892	\$3,860	\$2,883
Average final average salary	\$4,353	\$3,511	\$3,647	\$4,055	\$4,182	\$4,602	\$5,275	\$4,724
Number of retired members	55	98	107	106	145	811	875	2,197
07/01/2005 TO 06/30/2006								
Average monthly benefit	\$202	\$473	\$1,019	\$1,493	\$2,037	\$2,998	\$4,063	\$2,827
Average final average salary	\$4,106	\$3,253	\$4,052	\$4,117	\$4,317	\$4,721	\$5,490	\$4,773
Number of retired members	44	105	106	132	145	689	604	1,873
07/01/2006 TO 06/30/2007								
Average monthly benefit	\$178	\$514	\$930	\$1,559	\$2,136	\$3,140	\$4,263	\$2,900
Average final average salary	\$4,102	\$3,346	\$3,590	\$4,228	\$4,537	\$4,970	\$5,758	\$4,916
Number of retired members	48	113	90	109	193	534	514	1,577
07/01/2007 TO 06/30/2008								
Average monthly benefit	\$199	\$524	\$1,117	\$1,658	\$2,276	\$3,279	\$4,319	\$2,984
Average final average salary	\$3,816	\$3,066	\$4,215	\$4,412	\$4,612	\$5,067	\$5,786	\$5,017
Number of retired members	50	130	112	150	169	557	615	1,831
07/01/2008 TO 06/30/2009								
Average monthly benefit	\$200	\$573	\$1,005	\$1,725	\$2,436	\$3,368	\$4,406	\$2,041

Defined Benefit Plan
Average Benefit Payments for the Past Ten Years
By Years of Service Credit

Ten Years Ended June 30, 2014

Average monthly benefit	\$184	\$510	\$1,111	\$1,751	\$2,499	\$3,406	\$4,494	\$3,042
Average final average salary	\$3,966	\$3,592	\$4,202	\$4,638	\$5,082	\$5,283	\$5,935	\$5,169
Number of retired members	487	1,546	1,257	1,288	2,298	6,223	5,771	18,870

Average monthly benefit	\$149	\$519	\$1,225	\$1,781	\$2,513	\$3,621	\$4,827	\$3,240
Average final average salary	\$3,570	\$3,640	\$4,423	\$4,825	\$5,184	\$5,574	\$6,235	\$5,392
Number of retired members	45	157	144	112	242	544	617	1,854

07/01/2011 TO 06/30/2012								
Average monthly benefit	\$175	\$507	\$1,170	\$1,897	\$2,613	\$3,674	\$4,726	\$3,148
Average final average salary	\$3,292	\$3,759	\$4,307	\$4,898	\$5,219	\$5,605	\$6,109	\$5,331
Number of retired members	45	197	146	162	303	778	569	2,200

07/01/2012 TO 06/30/2013								
Average monthly benefit	\$161	\$475	\$1,186	\$1,963	\$2,781	\$3,811	\$5,162	\$3,149
Average final average salary	\$3,362	\$3,660	\$4,498	\$4,956	\$5,518	\$5,799	\$6,632	\$5,476
Number of retired members	44	234	156	154	294	685	447	2,014

07/01/2013 TO 06/30/2014								
Average monthly benefit	\$192	\$484	\$1,270	\$2,068	\$2,797	\$3,847	\$5,362	\$3,126
Average final average salary	\$4,148	\$3,677	\$4,751	\$5,364	\$5,600	\$5,902	\$6,860	\$5,589
Number of retired members	56	211	161	145	258	678	344	1,853

Ten Years Ended June 30, 2014								
Average monthly benefit	\$184	\$510	\$1,111	\$1,751	\$2,499	\$3,406	\$4,494	\$3,042
Average final average salary	\$3,966	\$3,592	\$4,202	\$4,638	\$5,082	\$5,283	\$5,935	\$5,169
Number of retired members	487	1,546	1,257	1,288	2,298	6,223	5,771	18,870

Follow-up Information

**Number of people receiving
refunds**

Explanation of “Green Box” and “Yellow Box Dollars”

Schedule of bond payments for \$3.3B bond

What would pay as you go look like?

Demographics about Kentucky teachers

Number of people receiving refunds

Number of people drawing from two retirement accounts

KENTUCKY TEACHERS' RETIREMENT SYSTEM
Analysis of Refunds

Fiscal Year	Vested	Non-vested	Number of Refunds	Average Service	Amount
June 30, 2011	219	2,258	2,477	2.04	17,325,387.00
June 30, 2012	239	2,166	2,405	2.20	19,549,073.00
June 30, 2013	284	2,230	2,514	2.34	22,059,094.00
June 30, 2014	325	2,568	2,893	2.22	25,461,843.00
June 30, 2015	308	1,994	2,302	2.57	23,025,972.34

In FY 2015, 486 of 1994 were retirees returned to work or approximately 25% of non-vested refunds.

Follow-up Information

**Number of people drawing
from two retirement
accounts**

What would pay as you go look like?

Demographics about Kentucky teachers

Number of people receiving refunds

Number of people drawing from two retirement accounts

Kentucky Teachers' Retirement System

Schedule of Retiree Benefits for July 2015

	Number	%	Amount	%
Second Accounts	530	1.03%	232,671.29	0.15%
First Accounts	50,878	98.97%	151,367,446.86	99.85%
	51,408	100.00%	151,600,118.15	100.00%

Second Accounts Do NOT Receive

- Disability
- Medical Insurance
- Survivor Benefits
- Life Insurance Benefits

Age Demographics Second Account Recipients

50-59	7	1.32%
60-69	364	68.68%
70-79	149	28.11%
80-89	10	1.89%
	530	100.00%

Information on Second Accounts

- Second Accounts on average have 5.9 years of service earned over 9.79 calendar years.
- The final average salary for a second account is \$49,980.
- The median retiree final average salary for retirees this July 1 is \$65,228.58.
- Second Accounts pay the same contribution rate of 12.855%.
 - [9.105% to retirement / 3.75% to medical]





Teachers' Retirement System
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Protecting & Preserving Teachers' Retirement Benefits